

Claims

1. A patterning method comprising forming an indent region in the surface of a substrate and depositing a liquid material onto the surface at selected locations such that spread of the material over the surface is controlled by the indent region.
2. A method according to claim 1 wherein the indent region is formed by providing a depression into the substrate.
3. A method according to claim 1 wherein the indent region is formed by providing the substrate with at least one raised portion extending from the substrate.
3. A method according to claim 1, wherein the liquid material is deposited using an inkjet printing technique.
4. A method according to any one of claims 1 to 3 wherein the indent region is formed with wall portions extending substantially orthogonal to the surface.
5. A method according to claim 1 or 2 wherein the indent region is formed with wall portions sloping relative to the surface.
6. A method according to claim 5 wherein the slope of the wall portions is arranged so as to provide an indent region having a width tapering towards the bottom surface of the indent region.
7. A method according to claim 5 wherein the slope of the wall portions is arranged so as to provide an indent region having a width widening towards the bottom surface of the indent region.
8. A method according to any one of claims 1 to 4 wherein the indent region is formed with a cross-sectional profile to provide a secondary barrier to further control the spread of the material over the surface.

9. A method according to claim 8 wherein the indent region is provided with a castellated cross-sectional profile.
10. A method according to claim 8 wherein the indent region is provided with a saw-tooth cross-sectional profile.
11. A method according to any one of the preceding claims comprising providing first and second indent regions of elongate shape and impressing a further elongate indent region arranged between but spaced from the first and second indent regions, the further indent region having a substantially planar bottom surface.
12. A method according to claim 11 wherein the material is selected to comprise a semiconductor material and the selected locations comprise the surface between the elongate indent regions so as to provide source and drain regions for a thin film transistor having a channel length determined by the width of the further elongate indent regions and a channel width determined by the length of the further elongate indent region.
13. A method according to claim 12 wherein the semiconductor material is selected to comprise an organic semiconductor material.
14. A method according to claim 11 or claim 12 or claim 13, when appendant to any one of claims 8 to 10, wherein the first and second indent regions are selected to comprise the cross-sectional profile providing the secondary barrier.
15. A method according to any one of claims 1 to 10 comprising providing two juxtaposed elongate indent regions and wherein the material is selected to comprise a conductive material and the selected locations comprise the surface between the elongate indent regions, thereby to provide an electrically conductive electrode.
16. A method according to claim 15 wherein the conductive material is selected to comprise a conductive polymer material.
17. A method according to claim 15 wherein the conductive material is selected to comprise a colloidal suspension of metal particles in a solvent.

18. A method according to any one of the preceding claims comprising adjusting the wetting characteristic of the surface of the substrate relative to the material to be deposited.
19. A method according to any one of the preceding claims wherein the indent region or regions is/are provided using an impression technique.
20. A method according to claim 19 wherein the surface is impressed using a stamping die.
21. A method according to claim 19 wherein the surface is impressed using a moulding technique.
22. A method according to any one of claims 19 to 21 comprising heating the surface.
23. A method according to claim 1 wherein the liquid material is poly-3-4-ethylenedioxythiophene.
24. A method according to claim 23 comprising the step of providing a coating of aluminium on the surface of the substrate and depositing the liquid material on to the aluminium coating.
25. A method of manufacturing an electronic device using a method according to any one of the preceding claims.
26. A method of manufacturing an electrooptic device using a method according to any of claims 1 to 24.
27. A method of manufacturing a conductive interconnect using a method according to any one of claims 1 to 24.
28. A method of manufacturing a colour filter using a method according to any one of claims 1 to 24.

29. A method of manufacturing a printed circuit board using a method according to any one of claims 1 to 24.

30. A method of providing a DNA array microchip using a method according to any one of claims 1 to 24.

31. A device comprising an electronic device according to claim 25, an electrooptic device according to claim 26, a conductive interconnect according to claim 27, a colour filter according to claim 28, a printed circuit board according to claim 29 or a DNA array microchip according to claim 30.